

The U.S. Food and Drug Administration (2014) has established an action level of 1 ppm mercury above which fish should not be consumed, but no other metals are regulated in this fashion. Kaercher Creek fish are well below this threshold. Cadmium and lead are regulated by the FDA (2011) in eating utensils at concentrations of 0.5 and 3 µg/ml leaching solution, respectively. Lower concentrations are required in storage vessels to minimize human exposure during storage, serving and eating. Fish tissue concentrations of lead, cadmium, chromium and copper for human consumption are not regulated by the state or federal government. Beyer et al. (1996) indicate that toxic effects of metals in aquatic invertebrates are not related to tissue concentrations, but whether the intake rate exceeds the detoxification and excretion capabilities of the organisms. These capabilities can vary widely within closely related taxa. Chromium toxicity varies according to the metal speciation present and availability of metals can change due to ambient conditions such as low or high pH. Lack of a fish tissue consumption threshold for metals other than mercury and absence of a relative scale of aquatic and human risk for metals in fish tissue makes further data interpretation an unproductive venture.

In conclusion, Kaercher Creek fish sampled in 2012 and 2014 can be safely consumed by humans. Staff recommend the same consumption frequency of one meal per week as the PFBC (2014) statewide fish consumption advisory.

Attachments

c: M. Kaufmann, Fisheries Management Area 6
R. Bednarchik, SE Region Law Enforcement Manager
Josh Lookenbill, DEP Water Quality Standards Division
Kristen Bardell, Water Pollution Biologist, DEP SC Region

References

- Beyer, W. N., G. H. Heinz and A. W. Redmon-Norwood. 1996. Environmental Contaminants in wildlife: Interpreting tissue concentrations. Lewis Publishers. New York. 493 p.
- Pennsylvania Fish and Boat Commission. 2014. 2014 Pennsylvania fishing summary: Summary of fishing regulations and laws. Harrisburg, PA. 47 p.
- Spotts, D. E. 1991. Kaercher Creek Lake Fish Tissue Report. Pennsylvania Fish and Boat Commission, 450 Robinson Lane, Bellefonte, PA.
- Spotts, D. E. 1993. Kaercher Creek Lake Fish Tissue and Sediment Results. Pennsylvania Fish and Boat Commission, 450 Robinson Lane, Bellefonte, PA.
- Weston Solutions, Inc. 2013. Final Trip Report: Kaercher Creek Park assessment and extent of contamination investigation, Kaercher Creek Park – Lake Site, Windsor Township, Berks County, Pennsylvania. Report to U. S. Environmental Protection Agency Region III Hazardous Site Cleanup Division. West Chester, PA. 11 p.

U.S. Food and Drug Administration. 2011. Appendix 5: FDA and EPA Safety Levels in Regulations and Guidance *in* Fish and Fishery Products Hazards and Controls Guidance, 4th ed. Rockville, Md.

U.S. Food and Drug Administration. 2014. Guidance for Industry: Action Levels for Poisonous or Deleterious Substances in Human Food and Animal Feed. Found online July 24, 2014 at <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ChemicalContaminantsMetalsNaturalToxinsPesticides/ucm077969.htm>

Figure 1. Fish tissue sampling locations on May 28-29, 2014 at Kaercher Creek Lake, Windsor Township, Berks County, PA.



6709400 Channel Catfish fillets

Analytical Report For
PA Fish Commission

Sample ID: 6709 400

Date Collected: 05/29/2014 10:00:00 AM

Lab Sample ID: I2014017210

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Analyst	Test Method
71947 SR IN FISH, Wet weight	<1.25 UG/G	05/26/2014 09:10 AM	CGASTON	EPA 6010 C

The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2009 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.

* denotes tests that the laboratory is not accredited for

** Laboratory is accredited by NJ NELAP, parameter not offered by PA LAP

Taru Upadhyay, Technical Director, Bureau of Laboratories

6709401 Bluegill fillets

Analytical Report For PA Fish Commission

Sample ID: 6709 401

Date Collected: 05/29/2014 11:00:00 AM

Lab Sample ID: I2014017211

Status: Completed

Test Codes / CAS # - Description	Reported Results	Date And Time Analyzed	Analyst	Test Method
71947 SR IN FISH, Wet weight	<1.25 UG/G	06/26/2014 09:10 AM	CGASTON	EPA 6010 C
<p>The results of the analyses provided in this laboratory report relate only to the sample(s) identified therein. Unless otherwise noted, the results presented on this laboratory report meet all requirements of the 2009 TNI standard. Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report.</p> <p>* denotes tests that the laboratory is not accredited for</p> <p>** Laboratory is accredited by NJ NELAP, parameter not offered by PA LAP</p> <p>Taru Upadhyay, Technical Director, Bureau of Laboratories</p>				